

Title (en)
ACTIVE COOLING OF A MOTOR WITH INTEGRATED COOLING CHANNEL

Title (de)
AKTIVE KÜHLUNG EINES MOTORS MIT INTEGRIERTEM KÜHLKANAL

Title (fr)
REFROIDISSEMENT ACTIF DE MOTEUR AVEC CONDUIT DE REFROIDISSEMENT INTÉGRÉ

Publication
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Application
EP 13739969 A 20130717

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Abstract (en)
[origin: WO2014019853A2] The invention relates to a motor, comprising an electronics housing (1) having integrated motor electronics, a stator, and a rotor. The stator comprises a stator bushing (3) and a laminated stator core having motor windings. The stator bushing (3) is arranged axially between the electronics housing (1) and the rotor. The motor according to the invention has an air-conveying element (14) connected to the rotor in a rotationally fixed manner and at least one axially extending passage opening (24) arranged in the stator bushing (3). The air-conveying element (14) is arranged axially between the stator bushing (3) and the rotor and has a circumferential axial intake opening (15) on the side of the stator bushing (3). During motor operation, the air-conveying element (14) sucks in an axial volumetric air flow (Z) at an external wall of the electronics housing (1) through the intake opening (15) and the passage opening (24).

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Opponent : ZIEHL-ABEGG SE
• DE 10313273 A1 20041007 - EBM PAPST Mulfingen GmbH & Co [DE]
• JP 2005192364 A 20050714 - MATSUSHITA ELECTRIC IND CO LTD
• US 2011074235 A1 20110331 - LEUNG NGAN FAI [US], et al
• WO 2009063774 A1 20090522 - TOSHIBA KK [JP], et al
• WO 9741630 A1 19971106 - SIEMENS ELECTRIC LTD [CA]
• US 2005116554 A1 20050602 - DANO VIKTOR [DE], et al
• US 2011148230 A1 20110623 - KNORR JOACHIM [DE], et al
• EP 1891335 B1 20170329 - GEBR BECKER GMBH [DE]
• US 4908538 A 19900313 - GEBERTH JR JOHN D [US]
• US 6119636 A 20000919 - FAN GUO XIANG [US]
• EP 2369183 B1 20121121 - EBM PAPST Mulfingen GmbH & Co [DE]
• CN 1606216 A 20050413 - MITSUBISHI ELECTRIC CORP [JP]
• DE 19727165 A1 19990107 - BOSCH GMBH ROBERT [DE]
• EP 1050682 A2 20001108 - GATE SPA [IT]
• EP 1622243 A1 20060201 - SIEMENS AG [DE]

Cited by
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